

## **VEGETATION DESCRIPTIONS FOR FIRE ISLAND NATIONAL SEASHORE**

### **I. Forest**

#### **I.A.4.N.a.300. ILEX OPACA FOREST ALLIANCE**

American Holly Forest Alliance

Physiognomic Class	Forest (I)
Physiognomic Subclass	Evergreen Forest (I.A.)
Physiognomic Group	Temperate broad-leaved seasonal evergreen forest (I.A.4.)
Physiognomic Subgroup	Natural/Semi-natural (I.A.4.N.)
Formation	Lowland temperate seasonal evergreen forest (I.A.4.N.a.)

**Alliance** **ILEX OPACA FOREST ALLIANCE (I.A.4.N.a.300.)**

*Ilex opaca* / *Myrica pensylvanica* Forest

American Holly / Northern Bayberry Forest

*Maritime Holly Forest*

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CLASSIFICATION CONFIDENCE LEVEL: 2

USFS WETLAND SYSTEM: N/A

RANGE:

***Fire Island National Seashore***

This association is confined to the Sunken Forest area of Fire Island.

***Globally***

This association is restricted to sand dunes along the Atlantic coast from New Jersey to Massachusetts.

ENVIRONMENTAL SETTING:

***Fire Island National Seashore***

This association occurs at the base and lower slopes of a large interdunal swale on the bay side of the secondary dune. The portion of the swale supporting this association lies above the water table and is therefore not influenced by ground water. The soil profile is characterized by a leaf litter layer atop a shallow (4-5 cm) sandy loam A horizon which grades directly to coarse sand.

***Globally***

This occurs on the lee side of dunes, typically on the more sheltered back dunes. Wind, salt-spray and sand deposition are natural processes in this community.

MOST ABUNDANT SPECIES:

***Fire Island National Seashore***

<u>Stratum</u>	<u>Species</u>
Tree canopy	<i>Ilex opaca</i> , <i>Amelanchier canadensis</i> , <i>Sassafras albidum</i>
Shrub	<i>Ilex opaca</i> , <i>Nyssa sylvatica</i> , <i>Vaccinium corymbosum</i>
Herbaceous	<i>Carex pensylvanica</i>
Vine / liana	<i>Smilax rotundifolia</i>

***Globally***

<u>Stratum</u>	<u>Species</u>
Tree canopy	<i>Ilex opaca</i>
Vines	<i>Toxicodendron radicans</i> , <i>Smilax rotundifolia</i>

CHARACTERISTIC SPECIES

***Fire Island National Seashore***

*Ilex opaca*, *Toxicodendron radicans*, *Smilax rotundifolia*

**Globally**

VEGETATION DESCRIPTION:

**Fire Island National Seashore**

The maritime holly forest of Fire Island is dominated by *Ilex opaca* trees of up to 300 years in age. Average diameters of hollies is 24 cm DBH. Frequent associates in the tree canopy include *Amelanchier canadensis* and *Sassafras albidum*. Other associated trees include *Nyssa sylvatica*, *Prunus serotina*, *Pinus rigida*, and *Quercus velutina*. The shrub layer is poorly developed and most frequently includes saplings of species in the tree layer, usually *Ilex opaca*, *Nyssa sylvatica*, *Prunus serotina*, and *Amelanchier canadensis*. Although not frequent, *Myrica pensylvanica*, *Vaccinium corymbosum*, *Gaylussacia baccata* and *Ilex glabra* may be present. The herbaceous layer is also poorly developed and is characterized by *Carex pensylvanica*, with *Cypripedium acaule* an occasional associate. Vines and lianas are typical of this association, most notably *Smilax rotundifolia*, *Parthenocissus quinquefolia*, and *Smilax glauca*.

Historical studies of this association at Fire Island has revealed a substantial change in the composition of the shrub and herb layers since 1967, when *Gaylussacia baccata* and *Vaccinium corymbosum* were regular associates of the shrub layer and *Aralia nudicaulis*, *Maianthemum canadense*, *Smilacina stellata*, *Pteridium aquilinum*, and *Trientalis borealis* were frequent associates of the herbaceous layer. These changes are attributable to heavy deer browse as a result of the increase in the deer population in recent decades (Art 1987, Art 1992).

**Globally**

Maritime holly forest of the lee sides of dunes. The dominant tree is *Ilex opaca*. Other canopy associates include *Amelanchier canadensis*, *Sassafras albidum*, *Quercus stellata*, *Quercus velutina*. Characteristic shrubs include *Myrica pensylvanica*, *Gaylussacia baccata*, *Vaccinium corymbosum*. Vines are particularly abundant, and include *Toxicodendron radicans*, *Smilax rotundifolia*, *Parthenocissus quinquefolia*, *Vitis* spp. The herbaceous layer is sparsely to moderately developed and includes *Aralia nudicaulis*, *Maianthemum stellatum* (= *Smilacina stellata*), *Maianthemum canadense*.

COMMENTS

**Fire Island National Seashore**

Palynological studies in the wetland of the Sunken Forest suggest that the holly forest has been present at Fire Island for several thousand years (Sirkin 1972).

**Globally**

This association is known from only a handful of sites despite fairly comprehensive inventory. It is thus ranked as globally rare G1.

**States/Provinces:** MA:S?, NJ:S?, NY:S?

OTHER NOTEWORTHY SPECIES

CONSERVATION RANK G1  
DATABASE CODE CEGL006376  
MAP UNITS FIIS plot 10

REFERENCES

Art 1987  
Art 1992  
Chrylser 1930  
Dowhan and Rozsa 1989  
Sirkin 1972  
Stalter 1979